

REMARKS/DISCUSSION OF ISSUES

By this amendment, Applicant amends claims 11, 19 and 21 for clarification. Accordingly, claims 1-3 and 5-21 are pending in the application.

Reexamination and reconsideration are respectfully requested in view of the following remarks.

35 U.S.C. § 103

The Office Action rejects claims 1-3, 5, 7-8 and 11-12 and 21 under 35 U.S.C. § 103 over Horiuchi U.S. Patent 2,945,313 ("Hardesty") in view of Kraines U.S. Patent 5,537,300 ("Kraines"); claims 1, 2, 5 and 12-13 under 35 U.S.C. § 103 over Kraines in view of Horiuchi; claims 3, 7, 11, and 15-16 under 35 U.S.C. § 103 over Kraines in view of Horiuchi and further in view of Kawano et al. U.S. Patent 6,404,131 ("Kawano"); and claim 6 under 35 U.S.C. § 103 over Horiuchi in view of Kraines and further in view of Kawano.

Applicant respectfully traverses those rejections for at least the following reasons.

Claim 1

Among other things, the device of claim 1 includes a plurality of light sources of different colors.

The Office Action fairly admits that Horiuchi does not disclose or suggest any such feature.

However, the Office Action states that such a feature is disclosed in Kraines and that it would have been obvious to modify Horiuchi to include such a feature "to produce color distribution of light across the waveguide plate."

Applicant respectfully disagrees.

MPEP § 2143 provides that:

"Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either

explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.”

Meanwhile, as noted above, the Office Action states, without any citation, that it would have been obvious to one skilled in the art to provide the light sources of Horiuchi with different colors “as shown by Kraines et al., to produce color distribution of light across the waveguide plate.” However, no such teaching can be found anywhere in Kraines. Indeed, Kraines only discloses that its control panel 20 may use LEDs “**switchable** between an amber and a green color” (emphasis added). There is absolutely no disclosure of adding different color LEDs to produce color distribution of light across the waveguide plate (indeed, Kraines does not have a waveguide plate). Furthermore, Horiuchi does not suggest any desire “to produce color distribution of light.” Horiuchi teaches the use of white light sources such as incandescent lamps and cold cathode lamps.

Here, the motive suggested by the Office Action for modifying Horiuchi is apparently a hindsight rationale for a modification not found anywhere in the prior art. The Office Action does not point to anywhere in the cited references with this motive is given, nor did the Examiner submit an affidavit as required by 37 CFR 1.104(d)(2) if this proposed motive were based on facts within his personal knowledge (see MPEP § 2144.03). The applicant requests such an affidavit if this rejection continues to be maintained based a motive for modification not explicitly suggested in the prior art.

Therefore, for at least these reasons, Applicant respectfully traverses the proposed combination of Horiuchi and Kraines.

Furthermore, among other things, the device of claim 1 includes an optical waveguide plate.

The Office Action fairly admits that Kraines does not disclose an optical waveguide plate.

However, the Office Action states that such a feature is disclosed in Horiuchi and that it would have been obvious to modify Kraines to include such a feature “so

that the light emanated from the light source is enclosed by the plate and then being guided to distant positions separated therefrom so that it is spread by the plate such that its brightness is evenly distributed.”

Applicant respectfully disagrees.

M.P.E.P. § 2143.01 provides that:

“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious.”

Here, Kraines specifically teaches against the use of an optical waveguide plate in place of the light conducting plate 66. More specifically, Kraines teaches “it is desirable to emit light from the upper edge surface 80 of the light conducting plate 66 so that the slot or channel 54 for recorded media is completely illuminated” (col. 4, line 66 – col. 5, line 2). Furthermore, Kraines teaches that the light conducting plate 66 should include a plurality of through holes 72 and holes 65 where it is inevitable for light to emerge from the light conducting plate 66. So an optical waveguide plate would be unsuitable for Kraines’ purposes.

Therefore, for at least these reasons, Applicant respectfully traverses the proposed combination of Kraines and Horiuchi.

Accordingly, for at least these reasons, Applicant respectfully submits that the device of claim 1 is patentable under 35 U.S.C. § 103 over any proper combination of Horiuchi and Kraines.

Claim 2

Claim 2 depends from claim 1 and is deemed patentable over any proper combination of Horiuchi and Kraines for at least the reasons set forth above with respect to claim 1.

Claim 3

Claim 3 depends from claim 1 and is deemed patentable over any proper

combination of Horiuchi and Kraines for at least the reasons set forth above with respect to claim 1.

Furthermore, Applicant respectfully submits that Kawano does not remedy the shortcomings of the proposed combinations of Horiuchi and Kraines as set forth above with respect to claim 1.

Accordingly, for at least these reasons, Applicant respectfully submits that claim 3 is patentable over the cited prior art.

Claim 5

Claim 5 depends from claim 1 and is deemed patentable over any proper combination of Horiuchi and Kraines for at least the reasons set forth above with respect to claim 1.

Claim 6

Claim 6 depends from claim 1. Applicant respectfully submits that Kawano does not remedy the shortcomings of the proposed combinations of Horiuchi and Kraines as set forth above with respect to claim 1. Accordingly, for at least the reasons set forth above with respect to claim 1, Applicant respectfully submits that claim 6 is patentable over the cited prior art.

Among other things, in the lighting device of claim 6, the light sources comprise a plurality of red, green, and blue light-emitting diodes which are distributed such that no light sources of the same color lie in mutually adjoining cavities.

The Office Action fairly admits that neither Horiuchi nor Kraines discloses such a feature.

However, the Office Action states that Kawano discloses such a feature, and that it would have been obvious to modify Horiuchi to include such a feature "for providing a desired color of light at a uniform brightness throughout the area of light emission surface."

Applicant respectfully disagrees. Kawano does **not** teach that the purpose of using of a plurality of red, green, and blue light-emitting diodes which are distributed such that no light sources of the same color lie in mutually adjoining cavities, is to provide a desired color of light at a uniform brightness throughout the area of light

emission surface.¹ Instead, the purpose of using of a plurality of red, green, and blue light-emitting diodes in Kawano, is to produce a **color light emitting display** (e.g., display 51 of FIG. 14, discussed in col. 12, lines 32-34).

Meanwhile, M.P.E.P. § 2143.01 provides that:

“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious.”

Here, Horiuchi discloses that the transparent plates 104/14 and lamps 105/15 are used as a **backlight** for a separate liquid crystal display (LCD) device 101. So, the only motivation that Kawano provides for using of a plurality of red, green, and blue light-emitting diodes which are distributed such that no light sources of the same color lie in mutually adjoining cavities (to produce a color light emitting display), would change the principle of operation of Horiuchi's backlight.

In summary, there is just no suggestion in the cited prior art that one should modify Horiuchi's backlight to use a plurality of red, green, and blue light-emitting diodes in the first place.

Therefore Applicant respectfully traverses the proposed combination of Horiuchi and Kawano as lacking any proper suggestion in the prior art.

Accordingly, for at least these additional reasons, Applicant respectfully submits that claim 6 is patentable over the cited prior art.

Claim 7

Claim 7 depends from claim 1 and is deemed patentable over any proper combination of Horiuchi and Kraines for at least the reasons set forth above with respect to claim 1.

Also, among other things, in the lighting device of claim 7, the second

¹ Kawano teaches that is the feature of locating the LED lamps R, G, and B closely to each other that provides a desired color of light at a uniform brightness throughout the area of light emission surface.

reflecting layer extends over the side faces of the optical waveguide plate.

The Office Action fairly admits that neither Horiuchi nor Kraines discloses such a feature.

However, the Office Action states that Kawano discloses such a feature, and that it would have been obvious to modify Kraines to include such a feature.

Applicant respectfully disagrees. Indeed, Kraines specifically **teaches away** from extending a reflecting layer over the side faces of light conducting plate 66. Kraines teaches that "it is desirable to emit light from the upper edge surface 80 of the light conducting plate 66 so that the slot or channel 54 for recorded media is completely illuminated" (col. 4, line 66 – col. 5, line 2).

Meanwhile, M.P.E.P. § 2143.01 provides that:

"If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious."

Therefore Applicant respectfully traverses the proposed combination of Kraines and Kawano as lacking any proper suggestion in the prior art.

Accordingly, for at least these reasons, Applicant respectfully submits that claim 7 is patentable over the cited prior art.

Claim 8

Claim 8 depends from claim 1 and is deemed patentable over any proper combination of Horiuchi and Kraines for at least the reasons set forth above with respect to claim 1.

Claim 11

Claim 11 depends from claim 1 and is deemed patentable over any proper combination of Horiuchi and Kraines for at least the reasons set forth above with respect to claim 1.

Furthermore, Applicant respectfully submits that Kawano does not remedy the

shortcomings of the proposed combinations of Horiuchi and Kraines as set forth above with respect to claim 11.

Therefore, for at least the reasons set forth above with respect to claim 1, Applicant respectfully submits that claim 11 is patentable over the cited prior art.

Also, among other things, in the device of claim 11, edges of the cavities lying opposite the upper side are covered by a second reflecting layer. Applicant respectfully submits that neither Horiuchi, Kraines nor Kawano includes such a feature.

Accordingly, for at least these additional reasons, Applicant respectfully submits that claim 11 is patentable over any proper combination of Horiuchi, Kraines and Kawano.

Claim 12

Claim 12 depends from claim 1 and is deemed patentable over any proper combination of Horiuchi and Kraines for at least the reasons set forth above with respect to claim 1.

Claim 13

Among other things, in the lighting device of claim 13, the optical waveguide mixes the colors of the light sources to output a mixed color light through the light emission surface.

The Office Action states that Kraines discloses such a feature.

Applicant respectfully disagrees.

The Office Action states that "since there are no partitions to block the different colors of the light sources, the colors of the light sources within the plate would obviously be mixing to output a mixed color light through the light emission surface."

However, Kraines does not disclose or suggest that any two colored light sources are ever present at a same time to be mixed within the plate! Instead, Kraines discloses that using LED's as the point sources of light also provide an alternate source of color and may be switchable between an amber and a green color." Thus, in the only place where Kraines mentions two different colors (amber

and green), Kraines teaches that two colors may be used in a **switchable configuration**. Nowhere does Kraines disclose or suggest that any two colors (e.g., amber and green) may be used in a **combinable configuration**.

Therefore, Kraines does not disclose mixing colors of the different-colored light sources to output a mixed color light through the light emission surface.

Furthermore, among other things, the device of claim 13 includes an optical waveguide plate.

The Office Action fairly admits that Kraines does not disclose an optical waveguide plate.

However, the Office Action states that such a feature is disclosed in Horiuchi and that it would have been obvious to modify Kraines to include such a feature "so that the light emanated from the light source is enclosed by the plate and then being guided to distant positions separated therefrom so that it is spread by the plate such that its brightness is evenly distributed."

Applicant respectfully disagrees.

M.P.E.P. § 2143.01 provides that:

"If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious."

Here, Kraines specifically teaches against the use of an optical waveguide plate in place of the light conducting plate 66. More specifically, Kraines teaches "it is desirable to emit light from the upper edge surface 80 of the light conducting plate 66 so that the slot or channel 54 for recorded media is completely illuminated" (col. 4, line 66 – col. 5, line 2). Furthermore, Kraines teaches that the light conducting plate 66 should include a plurality of through holes 72 and holes 65 where it is inevitable for light to emerge from the light conducting plate 66. So an optical waveguide plate would be unsuitable for Kraines' purposes.

Therefore, for at least these reasons, Applicant respectfully traverses the proposed combination of Kraines and Horiuchi.

Accordingly, for at least these reasons, Applicant respectfully submits that the device of claim 13 is patentable under 35 U.S.C. § 103 over any proper combination of Horiuchi and Kraines.

Claim 15

Claim 15 depends from claim 13 and is deemed patentable over any proper combination of Horiuchi and Kraines for at least the reasons set forth above with respect to claim 13.

Furthermore, Applicant respectfully submits that Kawano does not remedy the shortcomings of the proposed combinations of Horiuchi and Kraines as set forth above with respect to claim 13.

Accordingly, for at least these reasons, Applicant respectfully submits that claim 15 is patentable over the cited prior art.

Claim 16

Also, among other things, in the lighting device of claim 16, the second reflecting layer extends over the side faces of the optical waveguide plate.

The Office Action fairly admits that neither Horiuchi nor Kraines discloses such a feature.

However, the Office Action states that Kawano discloses such a feature, and that it would have been obvious to modify Kraines to include such a feature.

Applicant respectfully disagrees. Indeed, Kraines specifically **teaches away** from extending a reflecting layer over the side faces of light conducting plate 66. Kraines teaches that "it is desirable to emit light from the upper edge surface 80 of the light conducting plate 66 so that the slot or channel 54 for recorded media is completely illuminated" (col. 4, line 66 – col. 5, line 2).

Meanwhile, M.P.E.P. § 2143.01 provides that:

"If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being

modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious."

Therefore Applicant respectfully traverses the proposed combination of Kraines and Kawano as lacking any proper suggestion in the prior art.

Accordingly, for at least these reasons, Applicant respectfully submits that claim 16 is patentable over the cited prior art.

Claim 21

Claim 21 depends from claim 1 and is deemed patentable over any proper combination of Horiuchi and Kraines for at least the reasons set forth above with respect to claim 1, and for the following additional reasons.

Among other things, the lighting device of claim 21 comprises a plurality of light extraction elements disposed directly on the light emission surface.

Applicant respectfully submits that neither Horiuchi nor Kraines includes such a feature.

Accordingly, for at least these additional reasons, Applicant respectfully submits that claim 11 is patentable over any proper combination of Horiuchi and Kraines.

PROVISIONAL OBVIOUSNESS-TYPE DOUBLE PATENTING REJECTIONS

Applicant acknowledges the *provisional* obviousness-type double patenting rejections of: claims 1-7 and 12 over claims 1-7 and 12 of co-pending U.S. Patent Application 10/050,260 in view of Kawano; claims 1, 3, 7 and 8 over claim 8 of co-pending U.S. Patent Application 10/050,260 in view of Kawano; claims 1 and 9 over claim 9 of co-pending U.S. Patent Application 10/050,260 in view of Kawano; claims 1, 10 and 11 over claims 10 and 11 of co-pending U.S. Patent Application 10/050,260 in view of Kawano; claims 13-18 over claim 8 of co-pending U.S. Patent Application 10/050,260 in view of Kawano; claims 13, 15 and 19 over claims 13 and 14, and 19 of co-pending U.S. Patent Application 10/050,260 in view of Kawano; and claims 13 and 20 over claim 10 of co-pending U.S. Patent Application 10/050,260 in

view of Kawano. Once this application is deemed by the Examiner otherwise to be in condition for allowance such that no further amendments are needed, Applicant will be prepared to sign and submit an appropriate, proper Terminal Disclaimer.

CONCLUSION


In view of the foregoing explanations, Applicant respectfully requests that the Examiner reconsider and reexamine the present application, allow claims 1-3 and 5-21 and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (571) 282-0720 to discuss these matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment (except for the issue fee) to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

Respectfully submitted,

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